

PATENT  
Attorney Docket No. EXT-070C1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): Weir *et al.*  
SERIAL NO.: Not yet assigned GROUP NO.: Not yet assigned  
FILING DATE: Herewith EXAMINER: Not yet assigned  
TITLE: Purification Devices Comprising Immobilized Capture Probes and Uses  
Therefor

Commissioner for Patents  
Washington, D.C. 20231



INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with the provisions of 37 C.F.R. 1.97 and 1.98, Applicants hereby make of record the patents and publications listed on the accompanying Form PTO-1449, and other information contained herein, for consideration by the Examiner in connection with the examination of the above-identified patent application. In accordance with provisions of 37 C.F.R. § 1.98, copies of the references were cited or submitted in the parent application U.S. Serial No. 09/513,381, filed on February 25, 2000, which is relied upon for an earlier effective filing date under 35 U.S.C. 120.

REMARKS

In accordance with the provisions of 37 C.F.R. 1.97, this statement is being filed (CHECK ONE):

- ☒ (1) within three (3) months of the **filing date** of a national application other than a continued prosecution application under 37 C.F.R. 1.53(d), or within three (3) months of the **date of entry of the national stage** as set forth in 37 C.F.R. 1.491 in an international application, or before the mailing of the **first Office action** on the merits, or before the mailing of a **first Office action** after the filing of a request for continued examination under 37 C.F.R. 1.114; or
- ☐ (2) after the period defined in (1) but before the mailing date of a **final action** or a **notice of allowance** under 37 C.F.R. 1.311, and
- ☐ the requisite Statement is below, **OR**
- ☐ the requisite fee under 37 C.F.R. 1.17(p), namely **\$180.00**, is included herein, or

- ☐ (3) after the mailing date of a **final action** or **notice of allowance** but before the payment of the **issue fee**, **AND**
- ☐ the requisite Statement is below, **AND**
- ☐ the requisite petition fee under 37 C.F.R. 1.17(p), namely **\$180.00** is included herein.

It is respectfully requested that each of the patents and publications listed on the attached Form PTO-1449, and other information contained herein, be made of record in this application.

### STATEMENT


As required under 37 C.F.R. 1.97(e), Applicant(s), through the undersigned, hereby state either that:

- ☐ 1. Each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application **not more than three months** prior to the filing of the Information Disclosure Statement; or
- ☐ 2. No item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this Statement after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to **any individual** designated in 37 C.F.R. 1.56(c) **more than three months** prior to the filing of the Information Disclosure Statement.

### FEE AUTHORIZATION

Should any fee associated with the submission of this paper not be attached hereto as a check, the commissioner is authorized to charge the missing fee to our Deposit Account, No. 20-0531. Any over payments should be credited to said Deposit Account.

Respectfully submitted,



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FORM PTO - 1449

INFORMATION DISCLOSURE  
STATEMENT

ATTORNEY DOCKET NO.: EXT-070C1

APPLICANTS: Weir et al.

SERIAL NO.: Continuation of 09/513,381

FILING DATE: December 6, 2001 GROUP: Not yet Assigned

JC675 U.S. PTO  
10/021237

## U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A1	4,829,098	05/09/89	Hoffman, et al.	522	5	
	A2	5,006,473	04/09/91	Bouma, et al.	436	516	
	A3	5,034,428	07/23/91	Hoffman, et al.	522	5	
	A4	5,176,966	01/05/93	Epp, et al.	429	26	
	A5	5,215,882	06/01/93	Bahl, et al.	435	6	
	A6	5,310,650	05/10/94	McMahon, et al.	435	6	
	A7	5,346,672	09/94	Stapleton et al.	422	102	
	A8	5,453,382	9/26/95	Novotny, et al.	436	178	
	A9	5,482,836	01/09/96	Cantor, et al.	435	6	
	A10	5,482,863	01/09/96	Knobel	436	54	
	A11	5,518,900	05/21/96	Nikiforov, et al.	435	91.1	
	A12	5,632,957	5/27/97	Heller, et al.	422	68.1	
	A13	5,640,287	03/11/97	Nikiforov, et al.	635	24.3	
	A14	5,641,658	06/24/97	Adams, et al.	435	91.2	
	A15	5,679,524	10/21/97	Nikiforov, et al.	435	6	
	A16	5,741,639	04/21/98	Ensing, et al.	435	6	
	A17	5,762,876	06/09/98	Lincoln, et al.	422	67	
	A18	5,874,213	02/99	Cummins et al.	435	6	
	A19	5,932,711	08/03/99	Boles, et al.	536	22.1	
	A20	6,238,624	05/01	Heller et al.	422	68.1	
EXAMINER				DATE CONSIDERED			

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<b>FOREIGN PATENT DOCUMENTS</b>									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
	B1	WO 90/07582	12/07/90	PCT					
	B2	WO 91/08307	13/06/91	PCT					
	B3	WO 92/15712	17/09/92	PCT					
	B4	WO 94/16108	21/07/94	PCT					
	B5	WO 97/27327	31/07/97	PCT					
	B6	WO 97/35033	25/09/97	PCT					
	B7	WO 97/41256	06/11/97	PCT					
	B8	WO 97/45554	04/12/97	PCT					
	B9	WO 97/45721	04/12/97	PCT					
	B10	WO 98/51823	19/11/98	PCT					
	B11	0 671 626 A1	13/09/95	EPO					
	B12	0 703 296 A1	27/03/96	EPO					
	B13	0 776 700 A1	04/06/97	EPO					
	B14	19702907 A1	30/07/98	Germany					
	B15	19751968 A1	29/07/99	Germany					
<b>EXAM. INIT.</b>	<b>OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)</b>								
	C1	Adams, Christopher P. "Acrydite Gel Protocol," <i>Mosaic Technologies</i> (1998)							
	C2	Baba, Y., et al., "Base-specific separation of oligodeoxynucleotides by capillary affinity gel electrophoresis," <i>Electrophoresis</i> 19:433-436 (1998).							
	C3	Bartel, D.P., et al., "HIV-1 Rev Regulation Involves Recognition of Non-Watson-Crick Base Pairs in Viral RNA," <i>Cell</i> , 67: 529-536 (1991).							
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	C5	Bock, L.C., et al., "Selection of single-stranded DNA molecules that bind and inhibit human thrombin," <i>Nature</i> , 355:564-566 (1992).
	C6	Botchkarev, V.A., et al., "Neurotrophin-3 Involvement in the Regulation of Hair Follicle Morphogenesis," <i>J. Inv. Dermatology</i> , 111 (2) :279-285 (1998).
	C7	Ellington, A.D. and Szostak, J.W., " <i>In vitro</i> selection of RNA molecules that bind specific ligands," <i>Nature</i> , 346:818-822 (1990).
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	C11	Igloi, G.L., "Variability in the stability of DNA-peptide nucleic acid (PNA) single-base mismatched duplexes: Real-time hybridization during affinity electrophoresis in PNA-containing gels, <i>Proc. Natl. Acad. Sci USA</i> , 95:8562-8567 (1998).
	C12	Iyer, M., et al., "Accelerated Hybridization of Oligonucleotides to Duplex DNA," <i>J. Biol. Chem.</i> , 270: (24): 14712-14717 (1995).
	C13	Jarrett, H.W., "Affinity chromatography with nucleic acid polymers," <i>J. Chromatography</i> , 618: 315-339 (1993).
	C14	Jenison, R.D., et al., "High-Resolution Molecular Discrimination by RNA," <i>Science</i> , 263:1425-1428 (1994).
	C15	Joyce, G.F., "Amplification, Mutation and Selection of Catalytic RNA," <i>Gene</i> , 82: 83-87 (1989).
	C16	Kenney, M., et al., "Mutation Typing Using Electrophoresis and Gel-Immobilized Acrydite Probes," <i>BioTechniques</i> , 25 (3): 516-521 (1998).
	C17	Klug, S.J. and Famulok, M., "All you wanted to know about SELEX," <i>Mol. Biol. Reports</i> , 20: 97-107 (1994).
	C18	Leclerc, F., et al., "Athree-Dimensional Model of the Rev-Binding Element of HIV-1 Derived From Analyses of Aptamers," <i>Structural Biology</i> , 1 (5) :293-300 (1994).
	C19	Lorsch, J.R., and Szostak, J.W., " <i>In Vitro</i> Selection of RNA Aptamers Specific for Cyanocobalamin," <i>Biochemistry</i> , 33:973-982 (1994).
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	C20	Moody, H.M., et al., "Regiospecific inhibition of DNA duplication by antisense phosphate-methylated oligodeoxynucleotides," <i>Nucleic Acids Research</i> , 17 (12) : 4769-4782 (1989).
	C21	Muscate, A., et al., "Capillary Affinity Gel Electrophoresis for Combined Siz-and Sequence-Dependent Separation of Oligonucleotides," <i>Anal. Chem.</i> , 70:1419-1424 (1998).
	C22	Nielsen, P.E., et al., "Sequence-Selective Recognition of DNA by Strand Displacement with a Thymine-Substituted Polyamide," <i>Science</i> , 254: 1497-1500 (1991).
	C23	Olejnik, J., et al., "Photocleavable aminotag phosphoramidites for 5'-termini DNA/RNA labeling," <i>Nucleic Acids Research</i> 26 (15) :3572-3576 (1998).
	C24	Ozaki, Y, et al., "Affinity capillary electrophoresis using DNA conjugates," <i>Nucleic Acids Symposium Series No. 37</i> :235-236 (1997).
	C25	Paus, R., et al., "nerve Growth Factor Modulates Keratinocyte Proliferation in Murine Skin Organ Culture," <i>British J. of Dermatology</i> , 130: 174-180 (1994).
	C26	Quesada, M.A., "Replaceable polymers in DNA sequencing by capillary electrophoresis," <i>Current Opinions in Biotechnology</i> , 8:82-93 (1997).
	C27	Rehman, F.N., et al. "Immobilization of acrylamide-modified oligonucleotides by co-polymerization," <i>Nucleic Acids Research</i> , 27: (2) 649-655 (1999).
	C28	Reinhartz, A., et al., "A Novel Rapid Hybridization Technique: Paper Chromatography Hybridization Assay (PACHA)," <i>Gene</i> , 07525: 221-226 (1993).
	C29	Sassanfar, M. and Szostak, J.W., "An RNA motif that binds ATP," <i>Nature</i> , 364:550-553 (1993).
	C30	Smith III, N.L. and Lenhoff, H.M., "covalent Binding of proteins and Glucose-6-Phosphate Dehydrogenase to Cellulosic Carriers Activated with s-Triazine Trichloride," <i>Anal. Biochem.</i> , 61:392-415 (1974).
	C31	Smithies, O., "An Improved Procedure for Starch-gel Electrophoresis: further Variations in the Serum Proteins of normal Individuals," <i>Biochem. J.</i> , 71 (3): 585-587 (1959).
	C32	Timofeev, EnN., et al., "Regioselective Immobilization of Short Oligonucleotides to Acrylic Copolymer Gels," <i>Nucleic Acids Research</i> , 24 (16): 3142-3148 91996).
	C33	Tsurui, H., et al., "A rapid and efficient cloning method with a solid-phase DNA probe: application for cloning the 5' flanking region of the gene encoding human fibronectin," <i>Gene</i> , 03452: 233-239 (1990).
	C34	Tuerk, C. and Gold, L., "Systematic Evolution of Ligands by Exponential Enrichment: RNA Ligands to bacteriophage T4 DNA Polymerase," <i>Science</i> , 249: 505-510 (1990).
	C35	Van Ness, J., et al., "A versatile solid support system for oligodeoxynucleotide probe-based hybridization assays," <i>Nucleic Acids Research</i> , 19(12) :3345-3350 (1991).
	C36	Wagner, R.W., "Gene inhibition using antisense oligodeoxynucleotides," <i>Nature</i> , 372: 333-335 (1994).
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	C37	Wetmur, J., "DNA Probes: Applications of the Principles of Nucleic Acid Hybridization," <i>Critical Reviews in Biochemistry and Molecular Biology</i> , 26 (3/4): 227-259 (1991).	
	C38	Wetmur, J.G., "Acceleration of DNA Renaturation Rates," <i>Biopolymers</i> , 14:2517-2524 (1975).	
	C39	Wieder, R. and Wetmur, J.G., "One Hundred-Fold Acceleration of DNA Renaturation Rates in Solution," <i>Biopolymers</i> , 20: 1537-1547 (1981).	
	C40	Yokota, H. and Oishi, M., "Differential cloning of genomic DNA: Cloning of DNA with an altered primary structure by in-gel competitive reassociation," <i>Proc. Natl. Acad. Sci. USA</i> 87:6398-6402 (1990).	
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